

Appl.No.: 09/509,377

REMARKS / ARGUMENTS

Claims 1-10 have been amended.

Claims 1-4 have been amended in accordance with expert request as being indefinite for failing to particularly point out and distinctly the subject matter which applicant regards as invention (35 USC 112, §2).

Claims 5-10 have been amended in accordance with expert request as being in improper form (37 CFR 1.75 (c)).

The new claims do not result in the claiming of new matter (beyond the disclosure of the international application as filed).

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Applicant respectfully requests, that a timely Notice of Allowance be issued in this case.

21.08.2002

Respectfully Yours,
Dr. Sergey Matasov



VERSION WITH MARKINGS TO SHOW CHANGES MADEIn the claims:

CLAIMS

1. An endoscope with a disposable cartridge for invagination of an endoscopic tube and biopsy in flexuous channels, incorporating: a source of light; sources of pressure and vacuum; biopsy forceps; an endoscopic tube with a control block and a communication branch containing inwardly light and image transmission elements, a liquid or gas feeding channel, a biopsy channel, two pairs of closely wound springs with traction lines which pairwise connect the mechanism for bending the distal end to manual extractors of traction lines located in the control block, but externally a spring mounted on the tube, an invaginator, a tip, a seal, an anal dilator, differs in that the invaginator is tightly set in layers in the shape of a cylinder placed with a gap to the endoscopic tube.
2. The endoscope as defined in claim 1 differs in that the invaginator in the shape of a compact hollow cylinder is set in different forms short layers of a thin walled eversible tube compressed in longitudinal and transverse directions and arranged at different angles with narrowings of an external and widenings of its internal diameters.
3. The endoscope as defined in claim 1 or 2 differs in that it has a disposable cartridge consisting of a shell with a projection at its proximal end comprising the invaginator, a spring, a spring fixator, a spring distancer in which a distal seal of the endoscopic tube fastened at the unevolved end of the invaginator is placed, a condom of the distal part of the endoscopic tube connected to a spring stop and tip with elements for hermetic fastening to the endoscopic tube, whereas the proximal seal of the endoscopic tube with an anal dilator having a channel in the wall is located at the shell, but the everted end of the invaginator is fastened at the distal end of shell.
4. The endoscope as defined in claim 3 differs in that the endoscopic tube has transverse pleats of its external cover turned inwards and the areas for air-tight fixation of condoms' ends, as well as two air ducts with cocks, whereof the larger one communicates through its lateral opening with the cavity of the proximal seal of the endoscopic tube, but the smaller with the condoms' cavity.
5. The endoscope as defined in any preceding claim differs in that the proximal end of the cartridge for invagination joins the endoscopic tube introduction mechanism made in the shape of a cylinder with two pistons which are interconnected with distancers and the elastic tube, but the cavity between them is connected to the pressure and vacuum sources, at that the cavity between the proximal seal of the endoscopic tube and the distal piston comprises the spring, which returns the pistons to their home position and is connected to vacuum and pressure sources.
6. The endoscope as defined in any preceding claim differs in that it is supplied with an extraction-intraction system of traction lines with hydro-manual drive for controlling the distal end of the endoscopic tube, including pressure and vacuum sources which are linked to elastic tubes cavities containing liquid and springs with traction lines, at that tubes are fixed to springs with a thread but the springs are made with steps and at the

distal end are joined with traction lines, connected in control block with manual extractors-intractors of traction lines, which, in their turn, are joined with elements for synchronous vacuum feeding into the cavity of the manually extracted traction line and excess pressure into the cavity of the introduced traction line.

7. The endoscope as defined in claim 6 differs in that the extractors-intractors of traction lines comprise rods with pistons and cylinders positioned on them and the element connected with rods for synchronous vacuum creating into the cavity of the extracted traction line and pressure into the cavity of the introduced traction line, at that this element is made in the shape of gear or a cross piece connected with a control lever.
8. The endoscope as defined in claims 6, 7 differs in that the distal ends of the tubes and the traction lines terminates with a cylinder and a piston accordingly or the tubes' distal ends terminates with an elastic element, for instance a sylphone, but the traction lines are connected with the sylphone's distal end.
9. The endoscope as defined in any preceding claim differs in that it has a biopsy forceps introduction and extraction of biopsy forceps which includes pressure and vacuum sources connected through a cock to the cavity of the biopsy channel, the entrance to which is hermetized by a biopsy forceps seal, but their distal end has a biopsy channel piston, whereas the biopsy forceps have a traction line intensifier and include a flexible hermetic tube the cavity of which is connected to a pressure and vacuum source, but the distal ends of the tube and the traction line terminates with a piston and a cylinder accordingly or the tube terminates with an elastic element, for instance, a sylphone, but the traction line is connected to its distal end.
10. The endoscope as defined in any preceding claim differs in that a control block of the endoscopic tube is made in the form of desk and pedal units.

I claim:

1. (Amended) An endoscope with a disposable cartridge for the invagination of an endoscopic tube comprising an invaginator 23 of a thin-walled eversible tube, gathered on the distal part of an endoscopic tube 3 by pleats.
2. (Amended) The endoscope according to claim 1, wherein the invaginator is made in the form of a compact hollow cylinder placed with a gap 25 to the endoscopic tube 3, such that the cylinder keeps the gap 25 under the action of working pressure.
3. (Amended) The endoscope according to claim 2, wherein the invaginator 23 is placed with a gap 14 in a shell 22, whose distal end is joined with an everted end 12 of the invaginator 23, but the proximal end has a projection 31.
4. (Amended) The endoscope according to claim 3 further comprising a distal preservative 26, whose proximal and distal areas 28 are hermetically connected to areas 28 of the distal part of endoscopic tube 3, while a proximal area 28 of said preservative 26 has a stop 11, interacting with a spring 10 and the projection 31 of the shell 22, and the distal area 28 of the preservative 26 is fixed on the distal end of the endoscopic tube 3 with the help of a tip 6.

5. (Amended) The endoscope according to claim 4 further comprising a distancer 30, interacting with the distal end of the spring 10 and the proximal end of the cylinder of invaginator 23, while between the distancer 30 and the shell 22 is placed a sealing elastic ring 34, fixing compressed spring 10.
6. (Amended) The endoscope according to claim 1 further comprising a mechanism 53 for insertion of endoscopic tube 3, made in the shape of a cylinder 56 with a proximal and distal pistons 57 interconnected by distancers 58 and elastic tube 59, while in a cavity 61 the opposing spring 62 is placed.
7. (Amended) The endoscope according to claim 1 further comprising transformers of pressure in mechanical movement, made, for example, in the form of units "cylinder/piston", whose pistons are connected with traction lines 40, 41, bending the distal end of endoscopic tube 3.
8. (Amended) The endoscope according to claim 1 further comprising the body of a biopsy forceps 63 made in the shape of a flexible tube with a piston 66 placed on its distal end correspondingly to the inner diameter of biopsy channel of endoscopic tube 3, while inside the body is placed the transformer of pressure in mechanical movement, made, for example, in the form of unit "cylinder/piston", wherein piston is connected with traction line of forceps 63.